

Appln. No.: To be assigned
Divisional Application of 09/442,192
Preliminary Amendment

BSI-410US1

Amendments to the Specification:

Please add the following new paragraph after the title of the application on page 1:

This application is a divisional application of U.S. Patent Application No. 09/442,192, filed on November 16, 1999 (status: allowed).

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 35. (Cancelled)

36. (Currently Amended) ~~An elongated A~~ stent for holding open a body lumen, the stent comprising at least a first longitudinal region having first metallurgical properties and a second longitudinal region having second metallurgical properties different from the first metallurgical properties.

37. (Original) The stent of claim 36 wherein the first metallurgical properties are caused by a first annealing history and the second metallurgical properties are caused by a second annealing history.

38. (Currently Amended) The stent of claim 36 further comprising a transition region between the first longitudinal region and the second longitudinal region, the transition region having third metallurgical properties intermediate the first and second metallurgical properties.

39. (Original) The stent of claim 36 further comprising a transition region between the first longitudinal region and the second longitudinal region, the transition region having a gradient of metallurgical properties between the first metallurgical properties and the second metallurgical properties.

40. – 81. (Cancelled)

82. (New) The stent of claim 36, wherein the stent comprises at least a first component and a second component, the stent having an assembled configuration comprising the first component and the second component assembled together, the stent comprising:

an overlap region in the first component adapted to receive a portion of the second component in the assembled configuration, the overlap region having a first set of manipulation properties in the assembled configuration;

one or more flexible regions attached to the overlap region, each flexible region having a second set of manipulation properties different than the first set of manipulation properties, the

second set of manipulation properties including at least one of: greater flexibility, greater kink resistance, or less radial strength than the first set of manipulation properties; and

a mimic region attached to the flexible region, the mimic region having a third set of manipulation properties that is essentially equivalent to the first set of manipulation properties;

wherein the flexible region comprises the first metallurgical properties and the mimic region comprises the second metallurgical properties.

83. (New) The stent of claim 82, wherein the modular stent comprises a bifurcated modular stent wherein:

the first component comprises a bifurcated component comprising a trunk section, a bifurcated section attached to the trunk section and having a first branch comprising a socket and a second branch comprising a fixed leg interface, and a fixed leg section depending from the fixed leg interface, and

the second component comprises a modular leg component having a mating portion adapted for mating with the socket,

wherein the overlap region comprises the socket, the assembled configuration comprises the mating portion of the modular leg component inserted in the socket, the mimic region comprises the fixed leg interface, and the flexible regions comprise the trunk section and the fixed leg section.

84. (New) The stent of claim 83 further comprising a transition region between the fixed leg and the fixed leg interface and a transition mimic region in the modular leg component adjacent the mating portion, the transition region comprising an intermediate set of manipulation properties between the second set of manipulation properties and the third set of manipulation properties and the transition mimic region comprising a fourth set of manipulation properties essentially equivalent to the intermediate set of manipulation properties, the transition mimic region comprising third metallurgical properties different from the first metallurgical properties and second metallurgical properties.

85. (New) The stent of claim 82 further comprising a transition region between the flexible region and the mimic region, the transition region comprising an intermediate set of manipulation properties between the second set of manipulation properties and the third set of manipulation properties, the transition region further comprising intermediate metallurgical properties between the first metallurgical properties and the second metallurgical properties.

86. (New) The stent of claim 85, wherein the transition region comprises a gradient of manipulation properties from the second set of manipulation properties to the third set of manipulation properties and a gradient of metallurgical properties from first metallurgical properties to the second metallurgical properties.

87. (Newly Added) The stent of claim 82, wherein the mimic region is prepared by a process comprising the step of modifying the metallurgical properties of the mimic region relative to the flexible region.

88. (New) The stent of claim 87, wherein the step of modifying the metallurgical properties comprises heat treating the mimic region.

89. (New) The stent of claim 88, wherein the heat treating step comprises local laser heat treating.

90. (New) The stent of claim 87, wherein the step of modifying the metallurgical properties comprises providing a different annealing history for the mimic region.

91. (New) A stent for holding open a body lumen, the stent comprising at least a first longitudinal region having first metallurgical properties and a second longitudinal region having second metallurgical properties, the stent prepared by a process comprising the step of providing a different annealing history for the first longitudinal region as compared to the second longitudinal region.

92. (New) The stent of claim 91, wherein the step of providing the different annealing history for the first longitudinal region as compared to the second longitudinal region comprises exposing the first longitudinal region to a first thermal input which is greater than a second thermal input to which the second longitudinal region is exposed.

93. (New) The stent of claim 92, wherein the first longitudinal region is relatively more flexible than the second longitudinal region.

94. (New) The stent of claim 91 further comprising a transition region between the first longitudinal region and the second longitudinal region, the transition region having third metallurgical properties intermediate the first and second metallurgical properties, wherein the step of providing the different annealing history for the first longitudinal region as compared to the second longitudinal region comprises exposing the first longitudinal region to a first thermal input which is greater than a second thermal input to which the second longitudinal region is exposed, the method further comprising exposing the transition region to a third thermal input intermediate the first and second thermal inputs.

95. (New) The stent of claim 94, wherein the transition region comprises a gradient of metallurgical properties between the first metallurgical properties and the second metallurgical properties, the process comprising the step of exposing the transition region to a gradient thermal input intermediate the first and second thermal inputs.

96. (New) A process for making a stent having a first longitudinal region with first metallurgical properties and a second longitudinal region with second metallurgical properties, the process comprising the step of providing a different annealing history for the first longitudinal region as compared to the second longitudinal region.

97. (New) The process of claim 96, wherein the step of providing the different annealing history for the first longitudinal region as compared to the second longitudinal region comprises exposing the first longitudinal region to a first thermal input which is greater than a second thermal input to which the second longitudinal region is exposed.

98. (New) The process of claim 97 further comprising providing a transition region between the first longitudinal region and the second longitudinal region, the transition region having third metallurgical properties intermediate the first and second metallurgical properties, the process comprising exposing the transition region to a third thermal input intermediate the first and second thermal inputs.